

Work Order ID 75628

October-27-11 11:34:34 AM

75628

Page 1

Item ID: D6005-128 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Material
 Start Date: 27/10/2011 Start Qty: 40.00 ***40*** Cust Item ID:
 Required Date: 30/01/2013 Req'd Qty: 40.00 ***40*** Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 11/10/27 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D6005	Rev A

100	PURCHASING	0.00							
100									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>15344</u>								
	a) Order as per Dwg D6005								
	b) Material: 2.750 x 0.375 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube								
	c) Minimum ultimate tensile strength = 77 ksi								
	d) Minimum tensile yield strength = 66 ksi								
	e) Tolerance are per ASTM B210 (see details on Dwg D6005)								
	f) Material certification required								

110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								

CL 11/11/03 40

11/14/27 (37)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6005	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

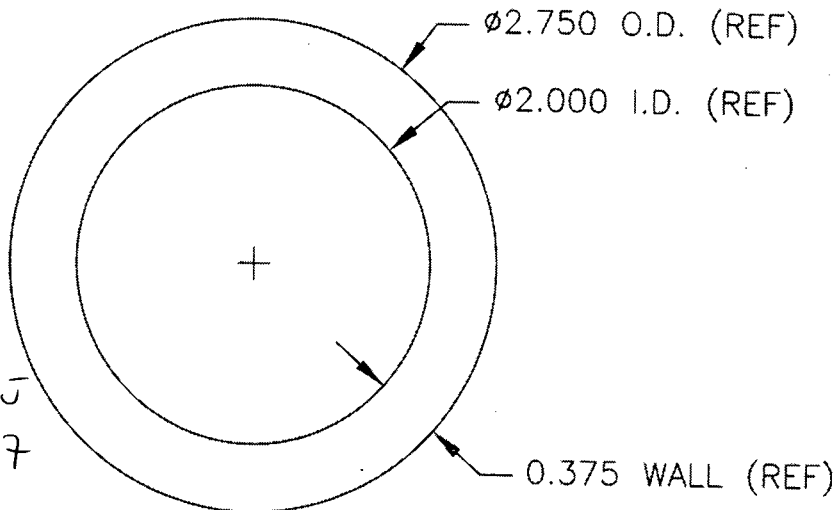
SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *A*

SHOP COPY
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO. 7562871.5

11/10/27



NOTES

- 1) D6005-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 128" LONG TUBE: D6005-128

- 2) MATERIAL: 2.750 OD x 0.375 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.015 MEAN (± 0.038 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 684/12

Cert No. / No. du certificat:

PO 15344

Bestellnummer:

Order No. / No. de commande

Auftrag:

44987/300

Our Reference/Notre Reference:

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung

Size / Dimension

Kennzeichnung

Marking/Marquage:

Rohre nahtlos gepresst

Tubes seamless extruded

AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6005

7075

2,750 INCH x 2,000 INCH x 0,375 INCH x 128,000 INCH

D6005-128 2.750 x 0.375 x 128

Cert. No. 684/12 - ALUnna - 7075 - T6511 - Cast No. ... - AMS - QQ - A - 200/11 - 2.750" OD x 0.375" Wall - Heat

Lot No. 802230 - ALUnna Order Conf. No. 44987/300-1 - P.O. 15344

Zustand:

Temper/Etat

T 6511

Country of Manufacture: Germany

Products are in accordance with applicable RoHS

Elemente ohne Grenzwerte:

einzel max. 0,05 %, insgesamt 0,15 %

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
7750/12	0,084	0,178	1,419	0,047	2,490	0,213	5,755	0,043	0,003	0,0351	0,0001	0,0016	0,0001

Hydrogen content: 0,09

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

84173	0,07	0,15	1,57	0,04	2,48	0,19	5,75	0,04	0,01	0,03			0,0001
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Hydrogen content: 0,12

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Cast/Heat/ pcs.
min.	77,0	66,0				
max.						
1	89,465	81,925	7,0			7750/802230/31
2	86,130	78,300	7,0			84173/802230/6
3	88,885	82,215	8,0			
4	88,885	82,360	7,0			

RMS outside 25 - max. 11,9 µ"

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

Notes:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

EXTRUSION INSPECTION SHEET

		SIDE A	SIDE B					ULTRA SONIC MEASURMENTS				
TUBE #	TOTAL LENGTH	DIA two readings	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	128.00"	2.750"	2.750"	2.00"	0.375"	0.010"	N/A	Middle	N/A			
1	128.00"	2.751"/2.753"	2.750"/2.752"	1.982"	0.376"/0.389"	0.008"	N/A	Middle	0.386"	0.374"	0.390"	0.386"
2	128.00"	2.745"/2.748"	2.747"/2.750"	1.981"	0.371"/0.395"	0.010"	N/A	Middle	0.389"	0.391"	0.384"	0.375"
3	128.00"	2.750"/2.751"	2.748"/2.751"	1.981"	0.366"/0.398"	0.015"	N/A	Middle	0.387"	0.372"	0.382"	0.395"
4	128.00"	2.753"/2.746"	2.746"/2.747"	1.981"	0.376"/0.385"	0.014"	N/A	Middle	0.387"	0.390"	0.386"	0.376"
5	128.00"	2.747"/2.749"	2.746"/2.749"	1.977"	0.375"/0.389"	0.022"	N/A	Middle	0.384"	0.376"	0.382"	0.392"
6	128.00"	2.749"/2.751"	2.749"/2.751"	1.989"	0.366"/0.398"	0.011"	N/A	Middle	0.392"	0.384"	0.373"	0.384"
7	128.00"	2.747"/2.750"	2.746"/2.749"	1.981"	0.386"/0.394"	0.015"	N/A	Middle	0.395"	0.389"	0.376"	0.384"
8	128.00"	2.747"/2.751"	2.749"/2.751"	1.990"	0.366"/0.381"	0.018"	N/A	Middle	0.382"	0.390"	0.385"	0.379"
9	128.00"	2.747"/2.748"	2.745"/2.747"	1.977"	0.377"/0.388"	0.016"	N/A	Middle	0.388"	0.394"	0.381"	0.389"
10	128.00"	2.747"/2.750"	2.749"/2.754"	1.984"	0.375"/0.385"	0.010"	N/A	Middle	0.388"	0.373"	0.381"	0.396"
11	128.00"	2.752"/2.754"	2.751"/2.754"	1.981"	0.372"/0.394"	0.008"	N/A	Middle	0.392"	0.382"	0.381"	0.386"
12	128.00"	2.753"/2.754"	2.748"/2.750"	1.980"	0.373"/0.392"	0.006"	N/A	Middle	0.386"	0.389"	0.390"	0.382"
13	128.00"	2.746"/2.749"	2.745"/2.748"	1.980"	0.363"/0.398"	0.019"	N/A	Middle	0.389"	0.397"	0.378"	0.371"
14	128.00"	2.745"/2.746"	2.745"/2.748"	1.980"	0.372"/0.391"	0.018"	N/A	Middle	0.396"	0.390"	0.371"	0.381"
15	128.00"	2.746"/2.747"	2.747"/2.749"	1.982"	0.367"/0.397"	0.013"	N/A	Middle	0.396"	0.385"	0.374"	0.392"
PART # D6005-128		P/O# 15344			BATCH # 875628			Notes: tubes have inside dia and wall out. See pictures				

5/16/09

